National Aeronautics and Space Administration

MARSHALL STAR

Serving the Marshall Space Flight Center Community

Sept. 2, 2010

NASA, ATK test five-segment solid rocket motor

By Jennifer Stanfield

With a loud roar and mighty column of flame, NASA and ATK Space Systems successfully completed a two-minute, full-scale test Aug. 31 of the largest and most powerful solid rocket motor designed for flight. The stationary firing of the first-stage development solid rocket motor dubbed DM-2 – short for Development Motor-2 – was conducted by ATK, a division of Alliant Techsystems of Brigham City, Utah, at its Promontory, Utah, test site.

After more testing, the first-stage solid rocket motor will be certified to fly at temperature ranges between 40-90 degrees Fahrenheit. The solid rocket

*See **DM-2** on page 5*

The Ignition of Development Motor-2 test Aug. 31: DM-2 is the largest and most powerful solid rocket motor designed for flight.

Bus routes set for Marshall 50th anniversary event Sept. 8

On Sept. 8, the Marshall Space Flight Center team is encouraged to catch a bus to Activities Building 4316 to take part in Marshall's 50th anniversary commemoration honoring "The Work of Generations."

The event commemorates the Sept. 8, 1960, dedication ceremony at Marshall, led by President Dwight Eisenhower, and pays tribute to the subsequent five decades of exploration and discovery. To be held from 12:30-3:30 p.m., it is open to all civil service employees, retirees and Marshall badged contractors.

Buses will run from 11:45 a.m. until 3:45 p.m., continuously looping between stops at Buildings 4200, 4203, 4205, 4250, 4487, 4493, 4600, 4610, 4663, 4666, 4705, 4708 and 4755.

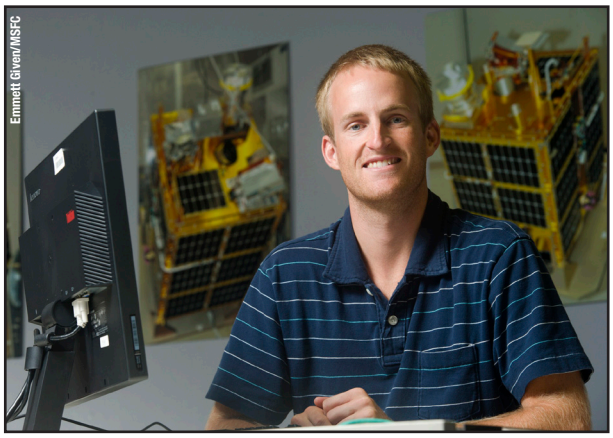
Buses will be available at the National Space Science and Technology Center at 11:45 a.m. and at Intergraph Building 700 at noon, and will make return trips to each at 2:30 p.m. and 3:45 p.m.

Marshall taxi service is available to those not on bus routes. Call 544-8294 for a Marshall taxi. A van with a chair lift also is available.

For complete bus stop details and additional event information, visit Inside Marshall or NASA Marshall on Facebook.

THE FACE OF MISSION SUCCESS IS:
Devon Sanders

Aerospace engineer in the Control Systems Design & Analysis Branch



- **Organization:** Engineering Directorate
- **Joined NASA**: 2008
- **Education**: Bachelor's degree in aerospace engineering, 2005; master's degree in aerospace engineering, 2006; both from Mississippi State University
- **Responsibilities**: I am a member of the Fast, Affordable, Science and Technology Satellite, or FASTSAT, Attitude Control Systems team and I'm currently preparing for the upcoming September launch and mission operations. I helped design, write and test the Guidance, Navigation & Control Flight Software. Now that launch is approaching and the spacecraft is at the launch site in Kodiak, Alaska, I am responsible for the orbit determination and mission analysis ground software tools, as well as various mission operations readiness tasks.
- **What will your role be during FASTSAT's 180-day mission?** My role during the mission's commissioning phase – the first 11 days – will be to help verify the functionality of the Attitude Control Systems, coordinate ground station coverage for communication and tracking passes, and help the team prepare for NanoSail-D ejection. Once we transition to the science phase, I will perform the orbit determination, assist with Attitude Control Systems on-orbit maintenance and support ground station scheduling.
- **How do you hope to contribute to Marshall's future goals?** I have always been inspired and motivated by space exploration, so I hope to be involved in the design, development and flight support of future spacecraft.
- **What is something people would be surprised to find out about you?** I have never seen a space shuttle launch, so I plan on going to watch STS-133. Hopefully our FASTSAT schedule and the shuttle schedule will work out so I won't have to wait until STS-134.

Filling out a form equals more money for local schools

Federal Impact Aid program kickoff is Sept. 8

By Megan Norris Davidson

The 2010-11 school year is in full swing, and with it comes new needs for supplies, computers and other items necessary to continue learning in the classroom. Marshall Space Flight Center team members with children in school can help meet those educational needs by taking a few minutes to fill out a Federal Impact Aid form.

Federal Impact Aid is an annual program that disperses federal grant money to local school districts financially burdened or impacted by federal populations. These federal populations must live or work on federal property. The funding is used by local school districts to meet a variety of unfunded requirements, including the hiring of additional educators.

This year's Federal Impact Aid program kickoff will be Sept. 8. Teachers will send forms home that week for parents to fill out and return to their child's school.

"Since the announcement of the Base, Realignment and Closure, or BRAC, in 2005, area school districts – including Huntsville, Madison City, Madison County and Arab – have accepted more than 5,300 new students, and have received approximately $5 million in federal impact money," said Jeff Kemp of the U.S. Army Garrison's BRAC Support Team at Redstone Arsenal. BRAC is a process used by the U.S. Department of Defense and Congress to close excess military installations and realign the total asset inventory to save money on operations and maintenance.

"We are currently more than halfway through the BRAC effort, and will complete the remaining 2,100 personnel transitions over the next 12 months, so our community will definitely continue to grow," Kemp said. "With this expansion and reduced state education funding, every effort and every penny will count."

Parents who do not receive a Federal Impact Aid form through their child's school can access a form at The Schools Foundation website, http://www.theschoolsfoundation.org/.

Davidson, an AI Signal Research Inc. employee, supports the Office of Strategic Analysis & Communications.

Caring in Action Program Recipient of the Month

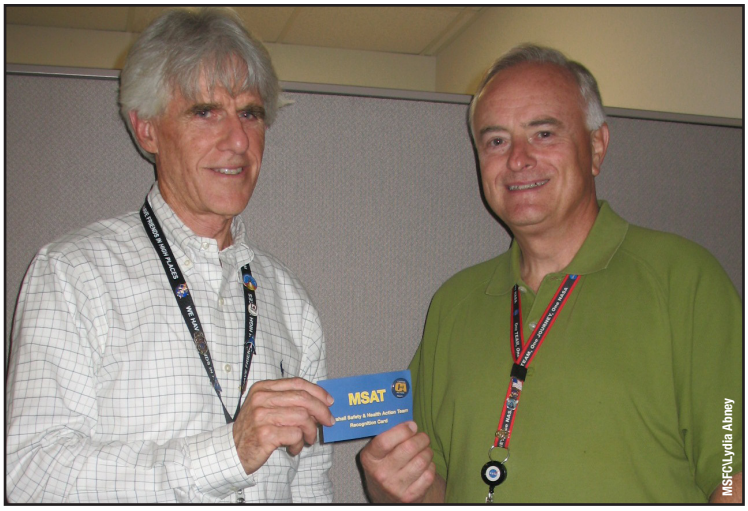
David Guy ensures picnic vendor has necessary fire extinguishers

David Guy, a safety and occupational health specialist in the Marshall Space Flight Center's Safety & Mission Assurance Directorate, has been selected as June's Caring in Action Recipient of the Month.

Guy discovered that a vendor at the summer Marshall Employee Family Picnic did not have fire extinguishers for the grills. He contacted the Redstone Arsenal Fire Department, and extinguishers were brought to the site.

"Mr. Guy could have left the vendor to resolve the problem after notification of the shortcoming," said Glenda Morton, Safety Action Team chairwoman. "Instead, he proactively assisted by identifying and implementing a corrective action on the spot. He acted with great caring. A job well done!"

For more information about the Caring in Action Program or to nominate a team member, visit https://safety.msfc.nasa.gov/sites/cia/.



David Guy, right, receives the Caring in Action Program Recipient of the Month award from Dennis Davis, chief of the industrial safety branch in the Safety & Mission Assurance Directorate.

Kevin Naderi receives NASA College Scholarship Fund Inc. award

Kevin Naderi, second from right, son of Marshall Space Flight Center engineers Melinda and Mahmoud Naderi, at left, receives the NASA College Scholarship Fund Inc. award from Marshall Deputy Director Gene Goldman, right, on Aug. 12 at the Center Director's Executive Forum. Naderi is a sophomore majoring in chemical and biological engineering at the University of Alabama in Tuscaloosa. His mother is a member of the Planning, Operations & Analysis Branch in the Engineering Directorate; his father is a member of the Engineering Cost Office in the Office of Strategic Analysis & Communications. The NASA College Scholarship Fund Inc. – a nonprofit organization managed by the Johnson Space Center in Houston – awards scholarships agencywide to qualified NASA dependents pursuing studies in science and engineering fields. For more information, visit http://nasapeople.nasa.gov/nasascholarship/index.htm or contact Bill Mayo at 544-7220.

Star available day early to coincide with 50th anniversary of center's dedication

To coincide with the 50th anniversary of the dedication of the Marshall Space Flight Center on Sept. 8, 1960, the Marshall Star will go to press a day early next week.

The issue will be posted online at 2 p.m. Sept. 7 at http://marshallstar.msfc.nasa.gov/. Printed copies will be delivered to the center Sept. 8.

The Star will include photos of President Dwight Eisenhower and Wernher von Braun, the center's first director, who presided at the center's dedication.

Classified Ads

To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Marshall Star Ad Form." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue, Sept. 8, is 4:30 p.m. Thursday, Sept. 2.

Miscellaneous

Boston Terrier, eight month old, female, $400. 256-679-5927

Playar four-lug Chrome Wheels with tires, 18", $900 obo. 256-457-9709

Phillips-Magnavox television, 24", remote, $40 firm. 313-655-7966

Honda Generator - EB6500, electric start, $1,500. 256-679-8041

Fram PH7328 oil filter, fits Volvo 240. schulkd@gmail.com

Four tickets, Auburn-South Carolina. 256-724-1547 or 256-651-6534

Maytag washer/dryer. 256-503-9178

Bakers rack, matching bar height table, rusted bronze metal, sandstone inserts, glass top, $800. 256-244-2961

Jenome Memory Craft 9700 sewing machine, Giga Hoop, assorted threads, $800. 256-679-0188

Goats; two adult females, one young female, three young males. 931-425-0830

Oak two-piece entertainment center, 74" x 44 1/2", $500 obo. 256-508-5031

Football ticket, car pass, TSU/Alabama A&M. $50 obo. 256-651-9909

Realfeel drum practice pad, two-sided, hexagon $20. 256-651-5847

Large/X-large dog box for travel. 256-828-5591

Fisher Price ImagiNEXT toys, Batman Cave, Pirate Ship, Gorilla Jungle, accessories, $25 each set. 256-714-3067

Vehicles

2010 Mazda Miata, Grand Touring model, convertible, maroon/tan top, less than 700 miles, $26,000. 256-325-7256

2007 Camry LE, V6, 61k miles, $12,500. 256-509-2895

2007 Chevrolet Tahoe LS, greystone metallic, third row, 79k miles, $24,375. 256-565-9918

2007 VWJetta GLI, http://huntsville.craigslist.org/cto/1898578971.html, $18,500. 256-392-9626

2006 Honda CBR1000RR, black, carbon fiber extras, custom parts, 13k miles, $6,500. 256-683-1335

2002 Mustang, V6, 97k miles, $5,500. 478-320-5612

2001 Honda Odyssey EX, dark green exterior, 120K miles, six-disc CD player, $6,000. 256-859-4437

2001 Mercury Marquis, brown/tan-leather, loaded, six-CD changer, new battery, 65,900k miles, craigslist, $6,200. 256-247-0285

2001 Toyota Camry LE, automatic, white, tan interior, 92k miles, $6,300. 256-882-3197

1998 Stingray RS180 Bowrider, seats seven, bimini covers, fish/ski, new 140 I/O, $9,500. 256-640-6427

1998 Ford Windstar GL, tan, auto, 3.8 V6 engine, 118k miles, $3,500. 256-617-9614

1998 GMC LWB white pickup truck, 184k miles, $4,400. 468-9377

1993 Range Rover County LWB, 4.2V8, auto, 4x4, black w/ brown interior, 130k miles, $3,850. 256-658-8241

1992 Kawasaki KDX250, two-stroke, new top end. 256-505-9263

Wanted

Houses/offices to clean, available evenings and weekends. 256-777-8595, leave message

Enclosed trailer. 256-677-5217

Electrical work to do: wiring houses, detached-garage, yard lights, adding/removing switches, plugs, lights, ect. 256-468-8906

Good condition clarinet. 256-423-3581

DM-2 *Continued from page 1*

motor was built as an element of NASA's Constellation Program and is managed by Ares Projects at the Marshall Space Flight Center. ATK Aerospace Systems is the prime contractor.

Prior to the static test, the solid rocket motor was cooled to 40 degrees Fahrenheit to verify the performance of new materials and to assess motor performance at low temperatures during the full-duration test. Initial test data showed the motor performance met all expectations.

"For every few degrees the temperature rises, solid propellant burns slightly faster and only through robust ground testing can we understand how material and motor performance is impacted by different operating conditions," said Alex Priskos, first stage manager for Ares Projects at Marshall. "Ground-testing at temperature extremes pushes this system to its limits, which advances our understanding of five-segment solid rocket motor performance."

DM-2 is the most heavily instrumented solid rocket motor in NASA history with a total of 53 test objectives measured through more than 760 instruments.

The first stage solid rocket motor is designed to generate up to 3.6 million pounds of thrust, or lifting power, at launch. Information collected from this test, together with data from the first development motor test last year, will be evaluated to better understand the performance, reliability and robustness of the design.

Development Motor-2 prior to the Aug. 31 test in Promontory, Utah.

Although similar to the solid rocket boosters that help power the space shuttle to orbit, the five-segment development motor includes several upgrades and technology improvements implemented by NASA and ATK engineers. Motor upgrades from a shuttle booster include the addition of a fifth segment, a larger nozzle throat, and upgraded insulation and liner. The motor cases are flight proven hardware used on shuttle launches for more than three decades.

Stanfield is a public affairs officer in the Office of Strategic Analysis & Communications.

Obituaries

Edward Douglas Hildreth, 87, of Clarksville, Tenn., died Aug. 1. He retired from the Marshall Center in 1985 as an electronics engineer supervisor.

Toon Ferrell, 86, of Huntsville died Aug. 12. He retired from the Marshall Center in 1979 as a propulsion systems engineer.

Harry Walker Garber, 90, of Bluefield, W.Va., died Aug. 12. He retired from the Marshall Center in 1980 as a flight systems engineer. He is survived by his wife, Mary Garber.

Robert P. Little Jr., 67, of Huntsville died Aug. 12. He retired from the Marshall Center in 1999 as a mission operations integration engineer. He is survived by his wife, Donna Little.

David Aiello, 76, of Huntsville died Aug. 14. He retired from the Marshall Center in 1995 as a program analyst. He is survived by his wife, Judy Aiello.

George Smith, 88, of Huntsville died Aug. 24. He retired from the Marshall Center in 1984 as an engineer.

Cullan O. Bowling, 87, of Decatur died Aug. 25. He retired from the Marshall Center in 1987 as a program analysis officer.

Thomas Dellinger, 76, of Huntsville died Aug. 28. He retired from the Marshall Center in 1995 as a computer engineer. He is survived by his wife, Norma Steedman Dellinger.

Glenn Parker, 76, of Huntsville died Aug. 29. He retired from the Marshall Center in 1989 as an engineer. He is survived by his wife, Anne C. Parker.

Station astronaut Creamer shares mission highlights with Marshall; commemorates Expedition 22/23 with plaque hanging

David Higginbotham/MSFC

International Space Station astronaut T.J. Creamer shares highlights of his Expedition 22/23 missions during a visit to the Marshall Space Flight Center on Aug. 25. Creamer thanked the Payload Operations Center team for its support in planning and executing science during his 161 days living and working in space. He launched aboard a Russian Soyuz spacecraft Dec. 20, 2009, from the Baikonur Cosmodrome in Kazakhstan, and docked with the space station two days later. He and his crew members supported three space shuttle missions that delivered the U.S. Tranquility module, put the finishing touches on U.S. laboratory research facilities and attached the Russian Rassvet laboratory to the station. Creamer returned to Earth aboard a Soyuz on June 1.

David Higginbotham/MSFC

Johnathan Carlson, a data management coordinator with Teledyne Brown Engineering Inc., in the Marshall Center's Payload Operations Center, hangs the Expedition 22 plaque, assisted by astronaut T.J. Creamer in the control center in Building 4663. Each mission plaque is hung by a flight control team member who has made a significant contribution to the success of the expedition. The Payload Operations Center coordinates all science activities aboard the station.

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